

REID-HILLVIEW AIRPORT EVALUATION STUDY

**Closure/Relocation Effects
on
San Jose International Airport**

Safety Analysis

INSTITUTE OF GOVERNMENTAL
STUDIES LIBRARY

SEP 18 1986

UNIVERSITY OF CALIFORNIA

**Prepared by:
Airport Planning Section
San Jose Airport Department**

September 1986

REID-HILLVIEW AIRPORT

EVALUATION STUDY

CLOSURE/RELOCATION EFFECTS

ON


SAN JOSE INTERNATIONAL AIRPORT

SAFETY ANALYSIS

PREPARED BY:

AIRPORT PLANNING SECTION
SAN JOSE AIRPORT DEPARTMENT

SEPTEMBER 1986



Digitized by the Internet Archive
in 2024 with funding from
State of California and California State Library

<https://archive.org/details/C124886527>

REID-HILLVIEW AIRPORT EVALUATION STUDY

TABLE OF CONTENTS

I.	INTRODUCTION	1
A.	Statement of the Issue	1
B.	Purpose of Report	1
C.	Agencies Involved	2
D.	Report Contents	2
II.	SANTA CLARA COUNTY AVIATION SYSTEM	3
A.	National Airport Classification System	3
B.	Airports and Their Roles	4
1.	San Jose International Airport	4
2.	Reid-Hillview	4
3.	Palo Alto and South County	5
4.	Other Surrounding Airports	5
C.	Operating Agencies	6
1.	Santa Clara County	6
2.	City of San Jose	6
D.	Other Agencies	6
1.	State of California	6
2.	Federal Aviation Administration	6
3.	Metropolitan Transportation Commission	7
4.	Airport Land Use Commission	7
5.	Airport Commissions	7
III.	AIRPORT SYSTEM ACTIVITY	8
A.	Current Activity	8
B.	Forecast Activity	8
C.	Facility Requirements	9
D.	Closure Facility Impacts	10
E.	Relocation Impacts	12

IV.	AIRSPACE MANAGEMENT	13
A.	San Francisco Bay Region Terminal Airspace	13
1.	IFR Operations	13
2.	IFR Arrivals	13
3.	IFR Departures	15
4.	VFR Operations	15
B.	Aircraft Characteristics	16
C.	Aircraft Control by ATC	16
1.	General criteria	16
2.	Separation standards	16
3.	Aircraft mix impacts	17
D.	Effect on Air Traffic Control of Relocating Reid-Hillview Airport	17
V.	REID-HILLVIEW SAFETY	20
A.	Background	20
B.	Federal Standards	21
C.	FAA Procedures	24
D.	Airport Management Practices	25
E.	Summary	26
VI.	CONCLUSIONS AND RECOMMENDATIONS	27
A.	Summary of Findings	27
B.	Recommendations	28

APPENDIXES:

- A. Minutes of Airport Commission Meeting
- B. References

LIST OF EXHIBITS:

IV-1	Terminal Control Area and Precision Instrument Approaches . . .	14
V-2	Reid-Hillview Airport Layout Plan	22
V-1	Reid-Hillview Airport Obstruction Chart	23

I. Introduction

A. Statement of the Issue

In recent years, concern over the compatibility of general aviation airports with surrounding communities has risen as incompatible development continues in and around these airports. The concerns are varied and include: aircraft noise; low overflights; and the safety of both the people on the ground and in the air. All of these concerns have been raised with regard to Reid-Hillview Airport. Several aircraft accidents during the past year have brought into question the appropriateness of the Airport's location given the surrounding development. The County Board of Supervisors has initiated a study which will investigate the feasibility of relocating and/or closing Reid-Hillview Airport, a part of which is a review of the safety aspects of operations at the Airport.

Reid-Hillview Airport does not exist in a vacuum. There is a system of airports in Santa Clara County and actions taken at one facility will have some impact on the remaining airports. In recognition of this fact, the San Jose City Council at its April 22 meeting, referred to the San Jose Airport Commission, the issue of the impact upon San Jose International Airport of Reid-Hillview's relocation and/or closure. Additionally, the City Council has directed the administration to review the safety concerns at Reid-Hillview in order to ascertain if any actions need to be taken to improve operations at the Airport or the facility itself from a safety perspective.

B. Purpose of This Report

It is the intent of this study effort to clarify, analyze and synthesize these two issues and to bring forward objective conclusions and recommendations. Given that the County is the owner-operator of Reid-Hillview Airport, it is not intended for San Jose to become involved in the Airport's operations. However, in operating San Jose International Airport, the City has developed a staff expertise which may be of value to the County in its attempt to resolve the issues at hand.

Recognizing the diversity of the issues associated with Reid-Hillview Airport, it should be stated that the scope of this study is limited to the issues listed above. This report does not include an analysis of land uses around the airport nor does it provide input on the perception of safety that people have who live adjacent to the Airport. It is also not within this study's scope to analyze possible alternative sites for Reid-Hillview Airport or examine the economic, legal, political or environmental implications of relocating the Airport.

Prior to a decision being made as to the disposition of Reid-Hillview Airport, these other issues will probably be examined. Santa Clara County has undertaken such a study process although the study's results were not as yet available for incorporation into this report. The two

(2) areas discussed herein, provide crucial information concerning the overall Reid-Hillview Airport issue and the report should be viewed as but one element in the decision making process.

C. Agencies Involved

Issues as complex as those presented herein, cannot be approached without the involvement and input of many agencies. While the roles of these agencies are explained more fully in a later section of this report, they are listed below.

- o County of Santa Clara
- o City of San Jose
- o Federal Aviation Administration
- o State of California
- o Metropolitan Transportation Commission
- o Santa Clara County Airport Land Use Commission
- o Airport Commissions

Input from these agencies was solicited through meetings, correspondence and a review of published reports. Without this input, this report could not have been fully compiled.

D. Report Contents

Section II of this report provides background information on the Airports within the aviation system in and around Santa Clara County. It also describes in more detail the roles the various agencies play in the Airport System.

A review of current and forecast activity at the airports is contained in Section III along with the facility requirements necessary to meet the forecasts of demand. This section concludes with an analysis of the facility impacts of a relocation and/or closure of Reid-Hillview Airport upon San Jose International Airport.

Another aspect to be considered is how aircraft are controlled by the FAA once in flight. Section IV discusses this area and investigates what effect additional general aviation operations would have on airspace control around San Jose International.

The issue of safety is investigated in Section V. Several areas are studied including FAA and state standards, management practices and air traffic procedures.

Section VI contains the conclusions and recommendations of the overall study effort and outlines actions which can be taken by the various agencies.

On August 25, the San Jose Airport Commission held a special meeting to consider the two issues discussed in this report. The minutes of that meeting are contained in Appendix A.

II. Santa Clara County Aviation System

A. National Airport Classification System

Airports are separated into four different categories under the National Airport Classification System. The categories and the classification criteria are listed below.

Commercial Service Airports are those airports which serve 2,500 or more annual enplaned passengers.

Primary Airports are commercial airports which serve .01% or greater of the total U.S. enplanements.

1. Hub System - An air traffic hub is technically an area or metropolitan population center. For example, a hub may have a number of major and smaller airports. The hub system provides a convenient system for ranking areas by their relative size. The hubs fall into three classes; large, medium and small, determined by the percent of total domestic enplanements. The hub system is similar to, and somewhat overlaps the method used to define commercial service and primary airports. The hub system classification is outlined below.

<u>Hub Classification</u>	<u>Percent of Total Commercial Enplanements</u>
Large	1% and more
Medium	0.25 - 0.99%
Small	0.05 - 0.25%
Non	Less than 0.05%

General Aviation Airports provide services for smaller aircraft, commonly used for personal and business flying, and for commuter and air taxi operations. In addition, airports which have less than 2,500 annual enplaned passengers are also classified as "General Aviation". General aviation categories have been established based on aircraft design criteria. These are defined as follows:

1. Basic Utility I - Primarily intended to serve low-activity locations, small population communities and remote recreational areas. Approximately 75% of the propeller aircraft weighing less than 12,500 lbs. are accommodated.
2. Basic Utility II - Primarily intended to serve medium size population communities with the diversity of usage and potential for increased aviation activities. Approximately 95% of the propeller aircraft under 12,500 lbs. are accommodated.

3. General Utility - Primarily intended to serve communities located on the fringe of a metropolitan area, or a relatively large population community remote from a metropolitan area. All propeller aircraft weighing less than 12,500 lbs. may be accommodated.

Reliever Airports are general aviation airports in metropolitan areas which are used to reduce congestion at air carrier airports.

B. Airports and Their Roles

There are four public airports in Santa Clara County: San Jose International, Palo Alto, South County and Reid-Hillview. All but San Jose International are operated by Santa Clara County. San Jose International is owned and operated by the City of San Jose.

1. San Jose International Airport is the only airport in the county to provide air carrier service. The Airport also provides services for air cargo, general aviation business activities, and general aviation recreation and training activities. 608 based aircraft are accommodated at the airport which in 1985 handled 274,000 general aviation operations.

The facilities at San Jose International include three parallel runways. Runway 12R-30L has a length of 8,900 feet and normally accommodates all air carrier operations. Runway 12L-30R with a 4,419 foot length is used for all types of general aviation operations except for jets. Runway 11-29, only 3,000 feet long, is primarily a training strip. General Aviation facilities at the airport include hangar and storage space for 211 aircraft and 300 tie-down positions. Additional space for based aircraft is provided by the fixed based operators.

The Airport Master Plan calls for a major development program which will double the airport's existing capacity to handle the 10 million passengers anticipated by the year 2000. In addition, general aviation facilities will be expanded to accommodate approximately 804 based aircraft by 1997.

2. Reid-Hillview Airport is a reliever airport for San Jose International whose most important role, according to the County's Airports Master Plan, is to provide a place to park aircraft. This past year the airport accommodated 784 based aircraft and handled 220,534 general aviation operations in which there were 652,000 passengers including the pilot based on industry averages developed by the Aircraft Owner and Pilot Association (AOPA).

Operations at Reid-Hillview are conducted on two parallel runways, each 3,100 feet long. Facilities include shelters for 112 aircraft and 641 aircraft tie-down positions plus those of the Fixed Base Operators (FBO's).

Policies for future growth call for the addition of 170 aircraft parking spaces. New T-hangars or shelters are to provide 37 of these planned spaces. Minor additions to the taxiway system are proposed to facilitate aircraft ground traffic movement to points where congestion presently occurs.

3. Palo Alto and South County Airports also serve as reliever airports for San Jose International. In 1985, Palo Alto Airport had 584 based aircraft and South County had 105. This same year, 185,289 and 90,000 general aviation operations occurred, respectively, at Palo Alto and South County Airports with 548,000 and 266,000 passengers using these airports respectively.

Facilities at Palo Alto include a 2,500 foot long runway, hangars for 112 aircraft and 413 aircraft tie-down positions. At South County there is a single 3,100 foot runway with hangars for 3 aircraft, and 117 tie-down positions.

Future expansion proposed in the County's Airports Master Plan includes facilities for 590 based aircraft at Palo Alto and an increase of 180 based aircraft at South County. At Palo Alto, operations were projected to increase by 45,000. South County operations are anticipated to increase by 50,000.

4. Other Surrounding Airports

There are thirty (30) airports in the Bay Area that provide international, domestic, commuter and general aviation air services. The County's Airports Master Plan identified three adjacent general aviation airports as having a more significant impact on the activity and development of Santa Clara County's airports. These three airports are Fremont, San Carlos and Santa Cruz Sky Park.

Fremont Airport was a privately-owned facility in relatively poor condition. Some training by County based aircraft occurred here but was limited by the runway deterioration. Fremont had a 2,310 foot runway and 145 based aircraft. The Airport was formally closed in May 1986.

San Carlos Airport is at capacity in terms of based aircraft and operations. This places pressure on nearby Palo Alto Airport with no substantial expansion anticipated for San Carlos. Presently, the airport has 495 based aircraft. The runway length is 2,600 feet and last year 190,560 general aviation operations occurred.

Santa Cruz Sky Park was noted to have a limited development potential and an uncertain future when the Master Plan was written. At that time only .06% of the Santa Clara County owned aircraft were based there. The Airport later closed in 1982.

C. Operating Agencies

Two local government agencies have direct and indirect responsibilities for the operation of Reid-Hillview Airport.

1. County of Santa Clara owns and operates Reid-Hillview and South County Airports, and operates Palo Alto Airport on a long term lease. The Aviation Operations Division, which is a part of the County's Transportation Agency, has 12 full-time operations management staff members. The County has the responsibility to meet all federal and state requirements with regard to the safe operation of any of its airports.
2. City of San Jose is not directly or indirectly involved in the operation of Reid-Hillview, however, the City does have jurisdiction over a majority of the land surrounding the airport. Through zoning, land use and development controls, the City contributes to air safety at Reid-Hillview by protecting approach and departure paths.

D. Other Agencies

Other agencies also take an active role in the regulation of airports, including Reid-Hillview. The functions of these agencies are described below.

1. State of California - Through its Department of Transportation (CALTRANS) the state regulates all airports by requiring each airport to obtain a state permit. Any change to the runway system of an airport requires a modification to the permit. The state also administers a grant program which provides funds for airport capital improvement projects. CALTRANS also enforces the state Airport Noise Law, which requires certain actions at airports with noise impact zones.
2. Federal Aviation Administration (FAA) - The FAA serves several functions with regard to Airports. They issue permits which are required before certain types of aircraft may use the airport, administer an extensive grant program under the Airport Improvement Program and provide the air traffic control services which guide aircraft through the nation's airspace. In addition, the FAA licenses all pilots, mechanics and other crafts related to aircraft maintenance as well as requiring the registration and inspection of all aircraft. The FAA investigates, analyzes and reports on all aircraft accidents in addition to providing a variety of services with regard to safety training and other information areas.

3. Metropolitan Transportation Commission (MTC) - MTC prepares, through the Regional Airport Planning Committee (RAPC), a regional airport system plan which is updated periodically. MTC is also the review agency for all federal grant applications and conducts a variety of study efforts related to airports on a periodic basis.
4. Santa Clara County Airport Land Use Commission (ALUC) - The ALUC, which is staffed by Santa Clara County and is composed of officials from jurisdictions containing or affected by airports, reviews new land use proposals around airports to ensure compliance with previously adopted noise and safety criteria. The ALUC also reviews all land use and airport master plans. Its decisions can be overruled by a 2/3 vote of the affected jurisdiction.
5. Airport Commissions - The City of San Jose and County of Santa Clara both have Airport Commissions which serve an advisory function on airport issues. The Commissions review various airport projects and make recommendations to the appropriate decision-making bodies, the San Jose City Council or the Santa Clara Board of Supervisors.

III. Airport System Activity

A. Current Activity

The current activity for Santa Clara County airports under discussion totalled 2,081 based aircraft and 769,844 general aviation operations in 1985. The table below summarizes the recent activities by individual airports.

<u>Airport</u>	<u>Based Aircraft</u>	<u>Air Carrier</u>	<u>ANNUAL</u>	<u>OPERATIONS</u>		<u>Total</u>
			<u>Air Taxi/ Commuter</u>	<u>Gen'l Aviation</u>	<u>Military</u>	
San Jose Int'l.	608	78,827	11,265	274,021	733	364,806
Reid-Hillview	784	- -	111	220,534	46	220,691
Palo Alto	584	- -	634	185,289	-	185,923
South County	<u>105</u>	<u>- -</u>	<u>-</u>	<u>90,000</u>	<u>-</u>	<u>90,000</u>
TOTALS	2,081	78,827	12,010	769,844	779	861,420

Source: Draft FAA Aviation Forecasts: San Francisco, 1985, pp 29-30.

In general, Reid-Hillview, Palo Alto and South County Airports are used for business and recreational flying. Additionally, some touch and go training flights occur at Reid-Hillview and South County.

Because of the availability of an instrument landing system and longer runways, air carriers as well as more sophisticated general aviation aircraft, i.e., corporate/business jet aircraft and high performance twin engine aircraft, may be served at San Jose International. Therefore, recreational, business and executive flying, including use of business jets, are typical of the general aviation operations at the San Jose International Airport. Training for instrument approach procedures, which is not available at other county airports, also takes place.

B. Forecast Activity

The general aviation activity forecast is a key element in the planning process for future airport growth. The Santa Clara County Airports Master Plan forecast proposed that space for 2,850 based aircraft would be needed in the County by the year 2000. A later study, General Aviation Development Program Consolidation Report, expected a three to five year delay in attaining the forecast levels for based aircraft. This Consolidation Report anticipated that by 2000 space for 2600 aircraft would be needed in Santa Clara County. The delay was anticipated because of slow economic conditions in 1981 through 1983 and the slump in the shipment of new general aviation aircraft.

The Consolidation Report also proposed that general aviation operations in the county would exceed 1.2 million by the year 2000. This is lower than the 1,550,000 operations projected by the County's Airports Master Plan. Additionally, activity at San Jose International is expected to include in excess of 120,000 air carrier and commuter operations by 1997.

C. Facility Requirements

Predicated on technical evaluations and local policy, based aircraft and general aviation operation capacities for the County airports have been identified through previous master plan processes. The following table lists these capacities by airport.

<u>AIRPORT</u>	<u>RECOMMENDED BASED AIRCRAFT CAPACITY</u>	<u>RECOMMENDED GENERAL AVIATION OPERATIONS CAPACITY (Annual Operations)</u>
Palo Alto	590	310,000
Reid-Hillview	900	400,000
South County	300	195,000
San Jose Int'l.	<u>804</u>	<u>410,000 - 660,000</u>
TOTALS	2,594	1,315,000-1,565,000

Source: General Aviation Development Program Consolidation Report,
p. I-15

Using the demand forecasts noted in the previous section and the facility capacities listed above, the demand/capacity analysis is presented below.

<u>BASED AIRCRAFT</u>		<u>OPERATIONS (In Thousands)</u>	
<u>DEMAND</u>	<u>CAPACITY</u>	<u>DEMAND</u>	<u>CAPACITY</u>
2,600*/2,850**	2,594	1,280*/1,550**	1,315-1,565

* - Consolidation Report

** - County Airports Master Plan

Under the scenario presented above, future capacity for based aircraft will not meet demand. An additional 256 tie down spaces would be needed to meet anticipated demand. Depending on the assumptions made, the need for additional capacity based on operations is less clear. Not included

in these numbers is the additional demand created by the closing of Fremont Airport.

As stated earlier in this report, Fremont Airport provided space for 145 based aircraft and also handled 75,000 operations in 1985. While it is not possible to indicate which airports will be directly affected by Fremont closing, it would seem that this event would make a tight situation become tighter for meeting future general aviation demands within Santa Clara County.

Some solutions to the capacity problems have been presented in previous City and County reports. These have included further development of the then existing Fremont Airport, joint use of Moffett Field and the selection of a new South County site.

Subsequently, the Fremont Airport closed and a new site under consideration for the airport has been found to have significant problems with its location. The proposed site is near a dump and marshlands currently designated as a wildlife preserve where the presence of birds would be a hazard for aircraft. Controversy over environmental issues has already cast doubts over the suitability of the location.

Joint use of Moffett Field has also been removed as a possible alternative to provide additional general aviation capacity for the County. This suggestion received strong negative responses from the Navy, NASA and the surrounding communities of Mountain View, Palo Alto and Sunnyvale.

The selection of a new South County site remains a possibility. However, an additional general aviation facility in a more urban area would be more convenient for local users.

D. Closure Facility Impacts

In 1985, Reid-Hillview accommodated 38% of the County's based aircraft and 29% of the County's general aviation operations. The impact of closing this facility seems obvious. Existing airports would not be able to handle the additional based aircraft demands either presently or in the future.

Both Palo Alto and San Jose International Airports are currently at capacity in terms of based aircraft. Long waiting lists for space to park aircraft are routine for both airports. Some additional capacity, however, does exist at South County. Of the 90 rental tie-down positions available at the airport in May 1986, only 43 spaces were used. Therefore, of the three public airports in the county, only 47 aircraft parking spaces would be available to replace the 754 spaces presently utilized at Reid-Hillview, or a shortfall of 707 based aircraft would be created.

As discussed previously, the master plans for San Jose International, and South County Airports call for additional based aircraft facilities. These increases will not meet the demand as they total only 376 spaces.

The issue of closing Reid-Hillview also must be examined in terms of future planning for based aircraft. Using the County's Airports Master Plan forecast for based aircraft, Reid-Hillview is projected to provide space for 900 based aircraft or one-third of the County's total demand. A shortage of space for 256 based aircraft is presently anticipated by the year 2000. With the closing of Reid-Hillview, this shortfall would increase to 1,156 based aircraft if no additional measures are taken to meet the demand.

Shifting operations to adjacent airports is not as critical an issue as finding space for based aircraft. The County Airports Master Plan stated that Palo Alto and South County's Airports have an annual airfield capacity of 265,000 and 195,000 operations, respectively. In 1985, Palo Alto had a total of 185,923 operations and South County had approximately 90,000. Using these figures, approximately 184,000 additional take-offs and landings may be accommodated at these two airports. For comparison, 220,691 total operations occurred at Reid-Hillview in 1985. It also should be noted that general aviation operations have been generally lower in recent years.

Some additional operations capacity is presently available at San Jose International. However, because of the airport's urban location, general aviation use of the facility may significantly increase if Reid-Hillview closes. The definition of a reliever airport was presented in Chapter II. The removal of a percentage of operations by general aviation aircraft from air carrier airports is crucial to the efficient functioning of the national airspace system. This is the role currently played by Reid-Hillview Airport in taking these operations away from San Jose International Airport. While the technical capacity may be present to handle some additional operations at San Jose International Airport, the added congestion and complexity of further mixing airline and general aviation operations would be detrimental to San Jose International Airport.

By the year 2000, the County Airports Master Plan estimates the general aviation demand will reach 1,550,000 annual operations. Facilities planned for Palo Alto, South County and San Jose International will only be able to accommodate approximately 76% of these operations. The demand for operations in the future may be reduced with the elimination of the facilities for aircraft parking at Reid-Hillview. However, if forecasts come true, more pressure to handle additional general aviation activities would occur at the remaining airports in the County. At San Jose International, an expected 20% increase in general aviation operations could occur by 1995 with the closing of Reid-Hillview. This information was supplied by an FAA sponsored capacity task force which is currently investigating methods of increasing capacity at the three Bay Area air carrier airports. This increase would translate into approximately 200 additional operations per day or 73,000 per year.

Given the operations forecast for Reid-Hillview at 400,000 per year, San Jose International Airport would accommodate 18% of Reid-Hillview's operations. This scenario is viewed as a likely scenario and not a worst case one. This could result in air traffic control problems, increased congestion and delays. Further discussion on this will be presented later in this report.

E. Relocation Impacts

Without the additional capacity at existing airports, the closing of Reid-Hillview may result in the necessity to find another site for a general aviation airport. Selecting a new site for an airport facility is a long, arduous and costly process.

Generally, the first step is a site feasibility study. A list of possible sites would have to be compiled. The choices are narrowed down through an analysis of the physical and technical airport development criteria, land use compatibility, environmental factors, airspace/operational factors, accessibility and airport development costs. Consideration in the site selection process also must be given to the users of the airport. A more rural location may not be fully utilized as has occurred at South County Airport. The attractiveness of an urban airport, particularly for business flyers, is apparent from the waiting lists for aircraft parking at San Jose International, Palo Alto and Reid-Hillview Airports and the lack of such a list at South County. Even if a new site is found, a substantial percentage of aircraft may still use San Jose International because of its location.

To obtain federal funding for construction once a site is chosen, a number of FAA requirements would have to be met. First, the site and proposed development must be environmentally acceptable. A detailed environmental assessment document would have to be prepared to meet Federal as well as State guidelines. Next, the site has to be acceptable from an airspace standpoint. The site will be analyzed by the FAA to determine if it causes airspace interactions with other public airports. Finally, an airport layout plan must be developed and approved.

The State also requires that the new site be approved before a State airport permit is issued. In general, State airport development requirements are similar to the FAA's including the requirement for an environmental review document.

Local governments are involved in the review and approval of development plans. Long term land use decisions may also be required to regulate development around the site.

The total process may take up to five years or longer and success is not guaranteed. The selection of a new general aviation airport site in Fremont is a good example of how this process can be delayed. The site feasibility process began in 1980 and no final decision has yet been reached.

IV. Airspace Management

A. San Francisco Bay Region Terminal Airspace

The San Francisco Bay region terminal airspace serves a large complex of airports that accommodate a wide range of aircraft types and activities, including airline, general aviation, and military aircraft. The San Jose International Airport is located at the southern end of this region which is depicted in Exhibit IV-1. Exhibit IV-1 also illustrates the San Francisco Terminal Control Area and published precision instrument approaches.

The Terminal Control Area (TCA) is a designated block of reserved airspace shaped like an inverted cone whose apex lies at ground level and is centered, roughly, upon San Francisco International Airport. The TCA encompasses some of the most heavily-used airspace in the United States. Any aircraft which penetrates the TCA cone comes under positive control of FAA air traffic control facilities and must be identified by an on-board radio transmission device (transponder).

In addition to the TCA, there are several other forms of airspace control of which the TCA is the most restrictive. Both the Terminal Radar Service Area (TRSA) and the Airport Radar Service Area (ARSA) provide more positive aircraft control than currently exists for the area surrounding San Jose International Airport.

Although San Jose International Airport and Reid-Hillview Airport lie outside the TCA cone, aircraft departing San Jose to the northwest must turn before reaching 6,000 feet to avoid penetrating the TCA. It is significant that most airline and itinerant military flights are conducted in accordance with instrument flight rules (IFR). IFR flights can be conducted during most weather conditions. However, some military and the majority of general aviation flights are conducted in accordance with visual flight rules (VFR), which require good visibility. Under IFR, the pilot operates with reference to instruments in the aircraft cockpit and is under the control of a ground radar operator, i.e., Oakland Center, but under VFR the pilot principally operates by visual reference to the ground, horizon and airspace.

IRF operations. The United States is divided into some 20 air traffic service areas for aircraft operating on IFR flight plans. Traffic service in these areas is provided by Air Route Traffic Control Centers (ARTCC), commonly referred to as Centers. Centers may delegate airspace to local air traffic control (ATC) facilities for IFR approach and departure control.

San Jose falls within the area controlled by the Oakland ARTCC. Oakland Center has delegated airspace to the San Francisco Bay Terminal Radar Approach Control facility (Bay TRACON) for approach and departure control of aircraft operating to or from San Jose International Airport.

LEGEND






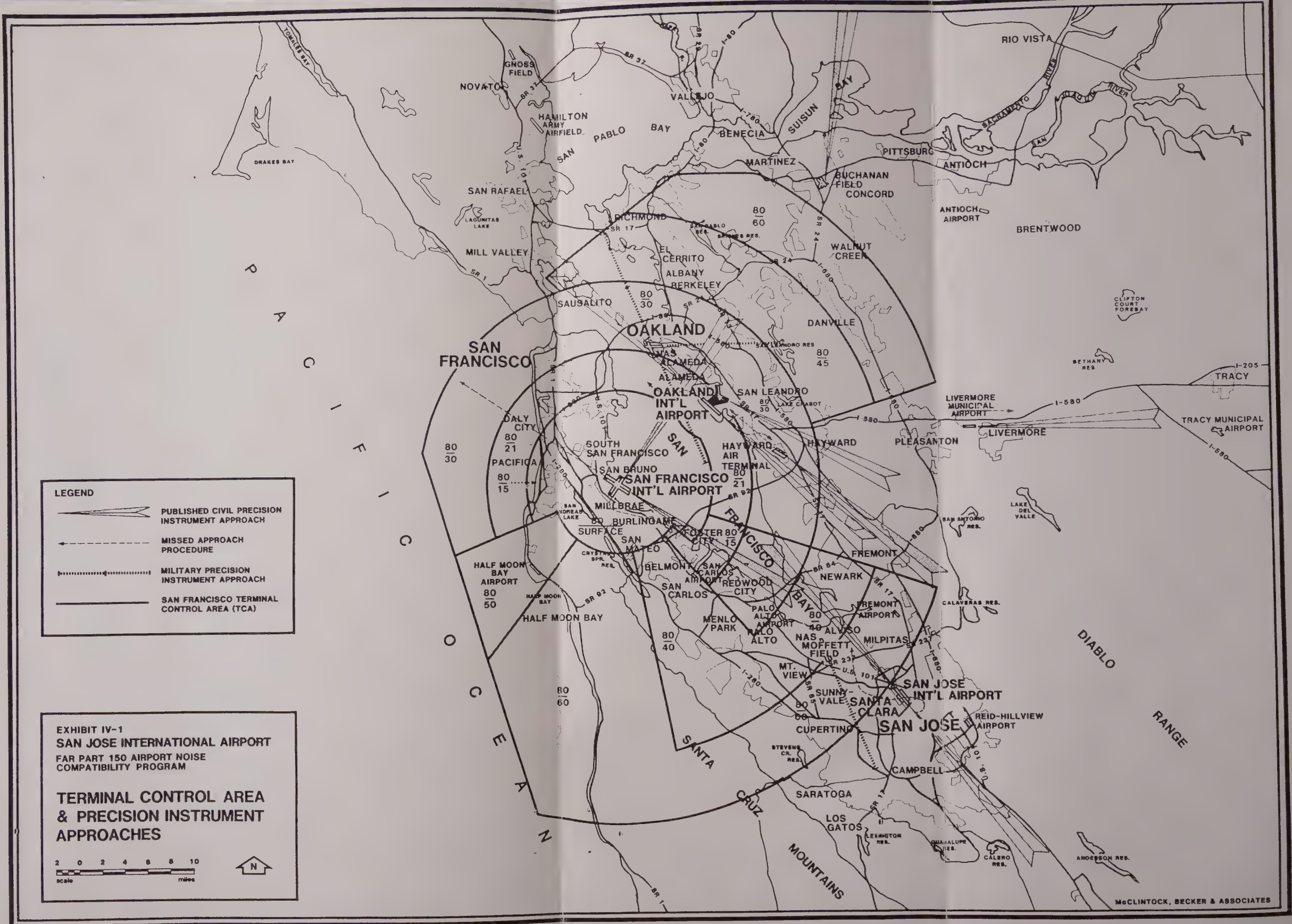
-  PUBLISHED CIVIL PRECISION INSTRUMENT APPROACH
-  MISSED APPROACH PROCEDURE
-  MILITARY PRECISION INSTRUMENT APPROACH
-  SAN FRANCISCO TERMINAL CONTROL AREA (TCA)

EXHIBIT IV-1
SAN JOSE INTERNATIONAL AIRPORT
 FAR PART 150 AIRPORT NOISE
 COMPATIBILITY PROGRAM

**TERMINAL CONTROL AREA
 & PRECISION INSTRUMENT
 APPROACHES**

2 0 2 4 6 8 10
 scale miles





IFR arrivals. Bay TRACON (also called Bay Approach Control) has jurisdiction over IFR aircraft in their delegated airspace and controls arriving aircraft generally as follows: High-performance turbojet and multi-engine turboprop aircraft enter the terminal airspace through designated areas. Before entering the terminal airspace, Oakland Center directs them to descend from the high en route altitudes and spaces them from five to ten nautical miles in trail (one behind the other). Arriving IFR aircraft are cleared by Oakland Center to enter Bay Approach Control airspace at a pre-determined altitude, generally 10,000 feet and below. Oakland Center then transfers control of the arriving aircraft to Bay Approach Control, which has the responsibility for controlling aircraft until they are handed-off to the San Jose Air Traffic Control Tower (ATCT) about 5-10 miles from touchdown. The ATCT provides clearance to the aircraft from the point of entry to the final approach course, while maintaining an aircraft separation of not less than three nautical miles. Radar vectoring of aircraft by air traffic controllers is normally used as a navigation tool to the desired final approach course. On arrival to San Jose Runway 30L, aircraft descend from a "quiet" approach altitude of 5,000 feet MSL to approximately 1,500 to 2,000 feet above the airport elevation at the Outer Marker (near the County Fairgrounds), and are cleared for the final approach to the runway. For arrivals on Runway 12R, aircraft generally approach from over the bay at 1700 feet above mean sea level, at which time they are cleared for landing.

Low performance aircraft arrivals are handled in essentially the same manner as high performance aircraft except they enter Bay Approach Control airspace at lower altitudes and are often directed on different routes for separation.

IFR departures. Bay TRACON, which is also referred to as Departure Control in the case of departures, separates departing aircraft from each other, as well as arriving aircraft that are operating under IFR in their delegated airspace. When the departing aircraft are properly separated, and sequenced no closer than ten nautical miles in trail if on the same route, and ready to depart Bay Approach Control's delegated airspace, control is transferred to Oakland Center for high altitude en route control. Most departing IFR aircraft are initially cleared to an intermediate altitude or fix (way point) with an expected clearance to a higher en route altitude five minutes after take-off.

Again, low performance aircraft are handled in essentially the same manner as high performance aircraft except that they are often directed on different routes for separation and depart delegated airspace at lower altitudes. Often the lower altitude is the en route altitude for the low performance aircraft.

VFR Operations. Unlike IFR flights, VFR flights are frequently not controlled by the air traffic control (ATC) system except in certain designated airspace. Within the Bay TRACON terminal area there are two types of designated airspace where VFR flights are controlled by the ATC system. These two types of airspace are airport traffic areas (airspace around airports with a control tower) and the Terminal Control Area (TCA) described at the beginning of this chapter.

The airport traffic area (areas within five statute miles of airports with operating control towers and extending from the ground up to 3,000 feet above the Airport) are located at the San Jose International Airport and several other airports in the San Francisco Bay Region, i.e., Reid-Hillview, NAS Moffett, Palo Alto, San Carlos and Hayward.

The TCA is centered at the San Francisco International Airport. Having a radius of about 28 nautical miles, the TCA extends from the ground surface up to 8,000 feet above mean sea level (MSL). In the southeast part of this circle, a portion of airspace extending from 3,000 feet up to 8,000 feet MSL is excluded from the TCA. This is to facilitate arrivals into Oakland and Hayward Airports. (See Exhibit IV-1).

B. Aircraft Characteristics

In controlling aircraft on approach or departure, the characteristics of the aircraft involved play an important role. The most important of these characteristics is the speed of a particular aircraft.

A fast aircraft following a slower one on approach to an airport must be separated by a great distance, so that it does not overtake the slower aircraft. At an airport such as San Jose International, there is a great diversity of aircraft speeds because of the many different types of aircraft using the airport. In many cases, these aircraft will use the same runway, thus compounding the need to provide adequate separation.

The speeds vary from an average of 160 MPH for most air carrier and business jets down to 90 MPH or less for single engine general aviation aircraft.

Another factor to consider in the control of aircraft is the level of instrumentation contained within the aircraft itself. Air carrier and other aircraft with the highest levels of instrumentation can be controlled more precisely than those with only the most basic instrumentation. Once again, the fleet mix at San Jose contains a wide range of aircraft instrumentation which increases the complexity of controlling arrivals and departures on the three runways.

C. Aircraft Control By ATC

1. General Criteria. As discussed previously, the type of airspace an aircraft operates in determines the level of control exercised by the FAA's air traffic controllers. Those aircraft operating within a TCA are required to maintain radio contact with the controllers and have navigational aids (transponder) on board the aircraft that provide the controller with a positive radar identification. Aircraft operating in the vicinity of an air traffic control tower are required to maintain two way radio contact with the facility.

2. Separation Standards. A major variable which affects the ability to properly control departing or arriving aircraft are the separation standards used by the controllers. Aircraft which fly at similar speeds can be closer together than two aircraft flying at widely varying speeds. The following are examples of the VFR separation distances used at San Jose International Airport:

- Two arriving single engine aircraft would be separated by 1 mile.
- Two arriving air carrier jets would be separated by 3.86 miles.
- An arriving air carrier jet followed by a single engine general aviation aircraft would be separated by 5.32 miles due to wake turbulence (disturbed air caused by an aircraft moving thru the air).
- A single engine aircraft followed by an air carrier jet would be separated by 3.06 miles.

3. Aircraft Mix Effects. Based on the above discussion, the aircraft fleet mix at an airport has two major effects. The first is on air traffic control. The easiest situation to handle is where all aircraft operate at similar speeds. This scenario is the case at many general aviation airports such as Reid-Hillview. Air traffic control becomes more complex as the aircraft mix becomes more diverse. Currently, San Jose has such a fleet mix, with approximately 90,000 annual air carrier operations and 270,000 general aviation operations. Within the general aviation operations count are up to 20,000 operations by corporate jets and other high performance aircraft which are similar in speed to the air carrier operations.

The aircraft fleet mix also affects the airport's capacity to accommodate a certain number of operations. An airport's capacity is many times expressed in the total minutes of delay experienced by aircraft in an average day. The FAA has recently conducted a study for San Jose which provides this delay information. Total average delay in 1985 was 351 minutes or .4 minutes per operation. By 1995 this number is forecast to rise to 3,857 minutes or 2.54 minutes per operation.

D. Effect on Air Traffic Control of Relocating or Closing Reid-Hillview Airport.

While it is difficult to forecast exactly how many of Reid-Hillview's operations would shift to San Jose, as previously discussed, this analysis will assume that San Jose International Airport will see a 20%

increase in its annual general aviation operations count. Most of these operations would be transient, in that limited space would be available to accommodate permanently based aircraft as discussed in the previous chapter. Transient parking may also be in short supply, thus further reducing the Airport's ability to accept additional traffic. Such an increase would have two effects:

1. Air traffic control around San Jose International would become more complex due to an increased diversification of the aircraft fleet mix. More general aviation aircraft would be using the same flight tracks as the air carrier aircraft thus requiring increased separation distances and more direct control on the part of the FAA's ATC staff.
2. Related to the first effect is an increase in delay. Results from the FAA study reveal the following increase in average daily delay in 1995:

Scenario	Total Delay (Minutes)	Delay Per Operations (Minutes)
- Baseline - Reid-Hillview remain in place	3,857	2.54
- 20% increase in general aviation operations with Reid-Hillview relocated	10,435	6.26

As can be seen, delay per operation increases by 146% in 1995. While six minutes of delay may not seem significant, a dollar cost can be placed on the delay faced by air carrier aircraft. In 1995, it is forecast that there will be 454 air carrier operations per day. The Air Transport Association (ATA) has determined that it costs an average of \$28.80 per minute to operate an air carrier jet in 1986 dollars. If each operation is delayed an extra 3.72 minutes due to the additional operations shifted from Reid-Hillview Airport, this results in an annual cost to the airlines and hence their passengers of \$17,753,506. Add to this figure the cost of delay to the general aviation aircraft, which could not be quantified, and the resultant annual cost is certainly significant.

There are several projects within the Airport's Master Plan, which when implemented, are intended to cope with normally anticipated delay. These projects include extensions to runways 11/29 and 12L/30R, aircraft hold aprons, and taxiway system improvements. Other improvements, such as installation of improved navigation aids, will assist in the control of aircraft but should only have a small affect on aircraft delay. The baseline scenario described above, includes these projects as givens. The increased traffic generated by the closure of Reid-Hillview airport

would necessitate new measures to cope with the added delay. A review of the airfield layout did not indicate any projects which would successfully reduce this delay, nor are advances in navigational aid technology expected to ease this problem.

Since neither the Airport Department nor the FAA may deny access to a general aviation aircraft wishing to use the airport, the delays and their associated costs would be incurred by all users. The magnitude of the cost could impair the airport's ability to attract new air carrier service and the current airlines ability to maintain their planned schedules.

In order to cope with the added complexity of controlling this traffic, new procedures might need to be adopted by the FAA. These procedures could include the implementation of a TCA or other form of airspace control for the San Jose area. Given the diverse fleet mix already existing at San Jose International, it may be prudent to implement such steps regardless of any actions taken concerning Reid-Hillview. The drawbacks to the establishment of a TCA involve some limitations on the use of the airspace by general aviation aircraft. There is expense involved in equipping these general aviation aircraft with appropriate avionics. Depending on the type of airspace control implemented some of these drawbacks may be minimized. Therefore, with safety as a prime concern, it is recommended that the City request that the FAA implement a TCA or other air traffic control procedures as appropriate.

V. Reid-Hillview Safety

A. Background

During the past year, several incidents at Reid-Hillview Airport have raised the issue of how safe is the area surrounding the airport. Put another way, are those responsible for the operation of Reid-Hillview doing everything possible to ensure the safety of those using the airport and its surrounding area. On June 24 the City Council directed the administration to undertake a staff study of this issue and the following sections represent the results of that study. This chapter will explore three primary areas related to the safety issue. These are:

- o Federal standards
- o FAA Procedures
- o County Airport Management Practices

It must be emphasized that quantification of some of the areas to be discussed is extremely difficult, if not impossible. Where appropriate, quantification has been accomplished.

For other areas, various sources of information were utilized. Meetings were held with County staff to ascertain management practices at Reid-Hillview Airport. Discussions with FAA personnel directly responsible for safety issues took place and other agencies were contacted. Additionally, San Jose Airport Department staff expertise was used to evaluate certain procedures at Reid-Hillview.

The definition of a safe airport involves numerous factors. It would include things such as obstructions to flight, airfield configuration and various other considerations. It must be remembered that any airport carries with it a certain level of risk or probability that an aircraft accident will occur. A review of the industry literature on this subject reveals that most accidents are related to human nature. Such causes as running out of fuel, maintenance and repair errors and pilot errors are the most common causes of accidents. Therefore, any definition of a safe airport must include these human related factors as an important component. Therefore, the following definition of a safe airport will be used to evaluate Reid-Hillview Airport:

"A safe airport is one where the risk of an aircraft accident is reduced to the minimum possible through the elimination of terrain problems, airport layout deficiencies, obstructions to safe flight, non-optimum air traffic control procedures and poor airport management practices."

B. Federal Standards

The FAA provides standards and recommendations to provide technical guidance for the design and continued operation of safe and efficient airports. Each airport layout should be consistent with these Federal standards for minimum lengths, widths and clearances for airport design and elimination of obstructions.

There are no major airport configuration problems at Reid-Hillview. The layout of the airport generally meets the FAA dimensional standards for utility airports which are designed for aircraft with a wingspan up to 49 feet. The only exception to this is that the separation between runways at Reid-Hillview (300 feet) does not meet the 700 foot FAA standard. A runway separation of less than 700 feet would only preclude simultaneous operations. This would effect the efficiency in the use of the two runways at the airport, but not necessarily the safety.

Additionally, the clear zones at the approach ends of Runways 31R and 31L are largely off airport property. This is despite the displaced threshold which shortens the runway length by 400 feet. However, the County Airports Master Plan stated that the FAA had determined that this situation was acceptable within the range of applicable criteria.

Reid-Hillview also meets current FAR 77 obstruction standards. To meet these standards, the landing thresholds for Runways 13 and 31 had to be displaced inward by 500 feet and 400 feet, respectively. The result, was that encroachments into the 20:1 clear zone surfaces by existing structures and vegetation were eliminated. See Exhibits V-1 and V-2.

Additional clearance over Eastridge Shopping Center could be provided by extending Runways 13L/R and displacing the thresholds for Runways 31L/R. A 250 foot extension, while maintaining the same runway length, would keep the clear zones for Runways 13L/R off of adjacent residential areas. However, only an additional 12.5 foot clearance over Eastridge Shopping Center would result with the 250 foot displacement of the thresholds for Runway 31L/R. The value of the additional 12.5 feet of clearance over Eastridge would not be worth the cost of the runway extensions, estimated at \$200,000. Any further decrease in runway length would reduce the number and size of aircraft that may be served at the airport.

Runways 31L and 31R each have Visual Approach Slope Indicators (VASI's). The County's Airports Master Plan recommended installation of VASI's on Runway 13L and on 13R to help assure pilot adherence to the proper approach slope for landing beyond the displaced thresholds.

Based on the above standards review, it can be concluded that Reid-Hillview does not have any terrain problems, airport layout deficiencies or obstructions to safe flight. Therefore, the Airport meets the first three criteria in the definition of a safe airport.



ALL WEATHER WIND ROSE

SOURCE: Records of San Jose Weather Station,
Dep't. of Public Works, Cooperative Station of
The U.S. Weather Bureau 1937-1947
RUNWAYS 13-31 PROVIDE 88.75% COVERAGE WITH
12 MPH (10.8 KTS) CROSSWIND COMPONENT

BUILDING & FACILITY LEGEND

1	T-HANGARS
2	SHELTERS
3	TERMINAL
4	MAINTENANCE BUILDING
5	BEACON TOWER
6	CONTROL TOWER (EL 170' top of hangar)
7	ELECTRICAL VAULT
8	EXISTING AUTO PARKING
9	FIXED BASE OPERATOR
10	FUEL ISLAND (two 10,000 gal tanks)
11	FUEL FARM (two 12,000 gal tanks) (to be relocated)
12	FUTURE FUEL FARM
13	COMPASS ROSE (to be relocated)
14	FUTURE COMPASS ROSE

DRAWING LEGEND

	EXISTING	FUTURE
AIRFIELD PAVEMENT		
OTHER PAVEMENT		
AIRPORT PROPERTY LINE		
AVIATION EASEMENT		
BUILDINGS		
BUILDING RESTRICTION LINE		
AIRCRAFT PARKING LIMIT		
CONTOUR LINE		
FENCE		
RUNWAY LIGHT		
RUNWAY END IDENT LIGHT (REL)		
RUNWAY SAFETY AREA		
FBO LEASE LINE		

RESIDENTIAL

PARK
(OPEN SPACE)

SCHOOL

RESIDENTIAL

MOBILE
HOME
RESIDENTIAL

SHOPPING

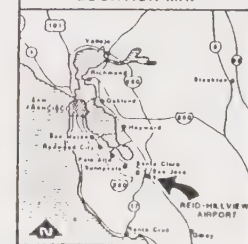
AUTO

EASTRIDGE

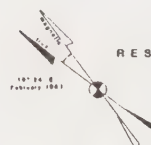
SHOPPING

CENTER

LOCATION MAP



VICINITY MAP



RUNWAY DATA

	EXISTING	FUTURE	EXISTING	FUTURE
PHYSICAL LENGTH & WIDTH	3100' x 75'	SAME	3100' x 75'	SAME
EFFECTIVE GRADIENT (%)	7.8	SAME	7.8	SAME
PAVEMENT STRENGTH (B.O.) 1000P	7.8	SAME	7.8	SAME
INSTRUMENT RUNWAY	NO	SAME	NO	SAME
FAR PART 71 REQUIRED	VISUAL 20.1	SAME	VISUAL 20.1	SAME
APPROACH SURFACES	VISUAL 20.1	SAME	VISUAL 20.1	SAME
APPROACH AID	VASI, REL	SAME	VASI, REL	SAME
RUNWAY CLASSIFICATION	BASIC UTILITY II	SAME	BASIC UTILITY II	SAME
RUNWAY MARKING	BASIC	SAME	BASIC	SAME
RUNWAY LIGHTING	MIL	SAME	MIL	SAME
TAXIWAY LIGHTING	MIL	SAME	MIL	SAME
CRITICAL AIRCRAFT	GEN AVIATION	SAME	GEN AVIATION	SAME

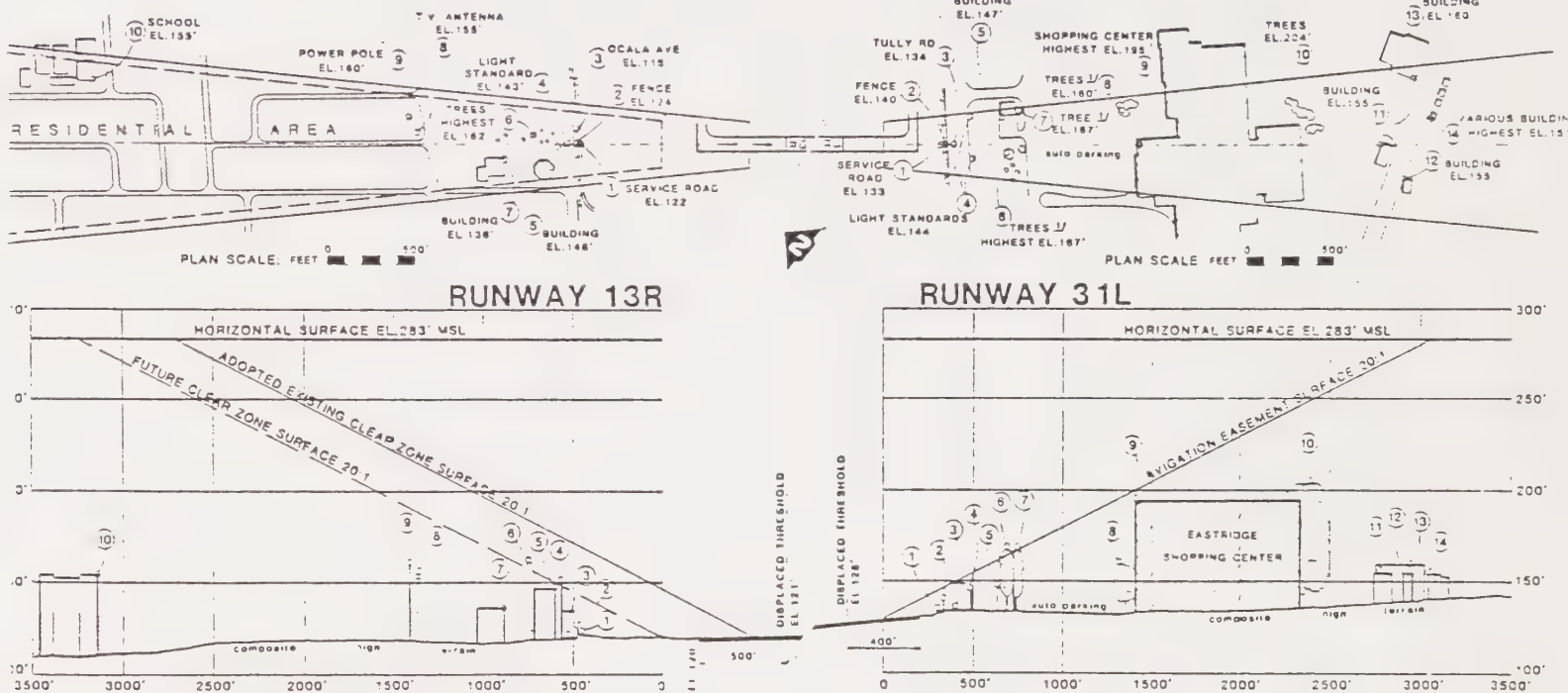
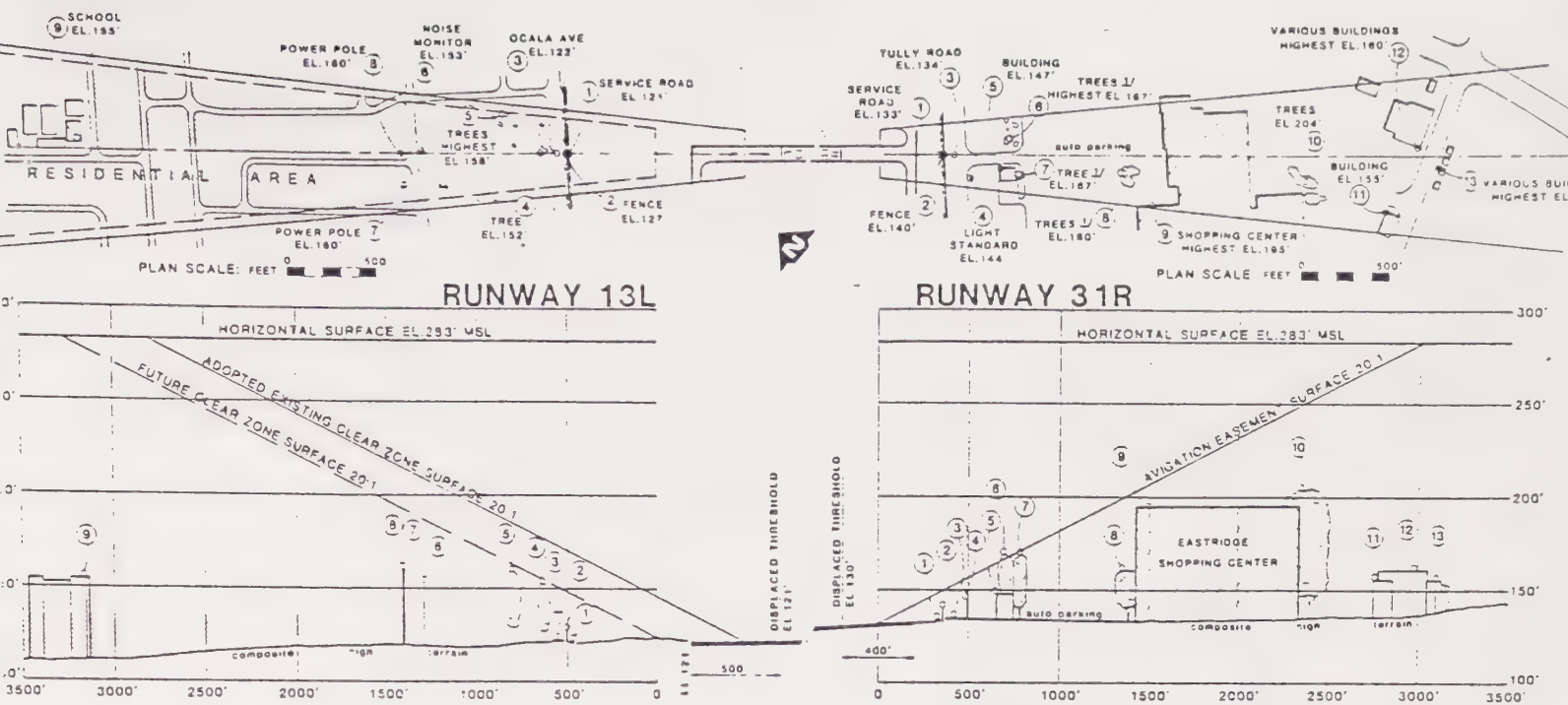
AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION	123' MSL	SAME
AIRPORT REFERENCE POINT	SAT 32° 18' 58" N	SAME
MEAN MAX TEMP. HIGHEST MONTH	124°F	SAME
NAVIGATIONAL AID	NONE	SAME
AIRPORT ROLE	BASIC UTILITY II	SAME
AIRPORT AREA	178 ACRES	SAME
AIRCRAFT BE-DOWN POSITIONS	841	738
T-HANGARS/SHELTERS	112	140

EXHIBIT V-1

Reid-Hillview Airport Layout Plan

Source: Santa Clara County Airports Master Plan



NOTES:

1. Roads shown are actual elevations. Federal Aviation Regulations Part 77 road clearance heights shown by a dash above each road.
2. All elevations are mean sea level (MSL).
3. * - Objects penetrating threshold location plane
o - Objects not penetrating threshold location plane

SOURCES:

1. Airport Obstruction Chart, Reid-Hillview Airport of Santa Clara County, N.O.A.A., May, 1979
2. United States Geological Survey Topographic Map
3. Field Survey.

EXHIBIT V-1

Reid-Hillview Obstruction Chart

Source: Santa Clara County Airports Master Plan.

C. FAA Procedures

The FAA is involved in several areas with regard to airport safety. The following is a summary of these areas and how they relate to Reid-Hillview Airport.

1. Inspection and Certification - The FAA requires that all pilots, aircraft mechanics and several other trades receive licenses issued by the FAA. In addition, FAA periodically inspects airport facilities to ensure that all regulations are met. This function is handled by the Flight Standards District Office (FSDO) located at San Jose International Airport.

For pilots, a 90 day recertification requirement is in effect. During any 90 day period, each pilot is required to execute 3 landings and takeoffs to have a license recertified. With regard to aircraft maintenance, the FAA conducts a minimum of four site inspections per year at FAA certified inspection stations. Due to the recent events at Reid-Hillview, the number of inspections have been increased and the FAA has added five new inspectors in the last three months. These inspections are generally visual in nature, with each based aircraft being inspected. The FAA has the right to ground any aircraft which appears to have a defect until repairs are made. All repairs must be certified by a FAA authorized maintenance inspector. These inspectors are usually not FAA employees but are certified by the FAA and receive a fee for this service. These inspectors go to a one week annual training seminar to ensure they remain familiar with current developments. While all mechanics must have FAA licenses, there is no on-going recertification requirement, nor is there any oversight of independent mechanics.

2. With regard to flying while under the influence of drugs or alcohol, there are state laws concerning this area and they are enforced much like similar laws related to automobiles. That is, they are enforced after the fact. If an FAA inspector spots someone either about to/or operating an aircraft under the influence, he will contact a law enforcement agency to detain that individual. This action has taken place several times at Reid-Hillview as well as at other Airports. The FAA will generally suspend the certificate of a pilot found flying under the influence and may completely revoke the certificate under some circumstances.
3. The FAA provides air traffic control services from the tower located at Reid-Hillview. With two parallel

runways, both left and right hand traffic patterns are used at the Airport in addition to straight in and out patterns. The FAA works with the County in establishing these procedures, although any changes must be initiated by the County. Recent discussions have revealed that straight-in-approaches from the south present visual problems for pilots at night at Reid-Hillview. One improvement to air traffic control procedures at the Airport would be the elimination of nighttime straight-in-approaches, thus requiring all aircraft to enter the traffic pattern.

4. Although not requested by the County, the FAA is pursuing the establishment of an Airport Safety Committee at Reid-Hillview. This committee would be composed of representatives from the fixed based operators, pilots, police, and fire services, chamber of commerce, airport management and air traffic control personnel. Such committees have been established at airports throughout the country, including San Jose International, and their primary focus is educational and informational. It provides a forum to air problems and potential solutions while sensitizing members to safety concerns. It is recommended that the City of San Jose have representation on this committee.

D. County Airport Management Practices

Santa Clara County, as the owner-operator of Reid-Hillview Airport, has the responsibility to provide oversight management of the facility. This includes ensuring that all federal standards are met; airfield security is maintained if appropriate; the airfield is free of debris and in usable form; leasehold management; and any environmental compliance actions that are necessary. To meet these varied obligations the County has established an Aviation Division as part of the Transportation Agency. Staffing consists of a director, environmental compliance officer and on-site airport supervisors. The responsibilities of these supervisors are primarily maintenance oriented with limited exposure to operational needs. FBO's who operate on the airport are therefore primarily self-policing and this may have a detrimental effect on airport safety. Industry experience suggests that proper supervision and enforcement is necessary to ensure that FBO's meet all required standards with regards to operations, fueling and any other provisions of their leases.

Such supervision is not the case at the present time. On-site supervisors need to be totally familiar with all operational aspects of the airport and also need to be on-site at all times the airport is open, which is not the case at the present time. Therefore, it is recommended that the County upgrade the quality and quantity of its on-site staff to ensure full coverage by experienced operational personnel.

A further means of ensuring safety standards are met is through provisions in property leases and operating agreements. The leases

currently in effect at Reid-Hillview are reportedly vague in the areas of standards and safety. It is recommended that these leases be upgraded at the earliest possible time to incorporate very specific standards for the conduct of business on the Airport.

While the number of operations are down at Reid-Hillview from those experienced in the late 1970's, there is still a significant amount of pilot training activity. These student pilots are less experienced and knowledgeable with regard to safety procedures. Implementation of the FAA safety committee will help increase the safety awareness of these pilots. It is further recommended that the County implement a pilot education program to alert airport users to the problems and dangers of low overflights. Such flights not only endanger the pilots but also, at a minimum, annoy residents in the airport area who perceive low flying aircraft as inherently unsafe.

E. Summary

According to the definition contained in Section A., is Reid-Hillview a safe airport? Based on the findings of this study the answer would be a conditional yes. The airport meets all the facility standards and airspace criteria established by state and federal agencies. The causes of accidents have been found to be unrelated to the airport itself with most being related to human error.

Assuming that there is a certain risk of accidents at any airport, are there actions that can be taken to reduce the chances of an accident and thus make the area around the airport a safer place to live or conduct business. This analysis has identified several actions which would promote safety at Reid-Hillview Airport. These actions are summarized as follows:

1. Elimination of nighttime straight-in-approaches.
2. Establishment of an Airport Safety Committee with City of San Jose representation.
3. Upgrading of on-site County staff with experienced personnel covering the Airport during primary operating hours.
4. Revision of land leases and operating agreements to incorporate more stringent and defined standards.
5. Establishment of a pilot education program for both safety and noise issues.

While implementation of these recommendations will not totally eliminate the risk of an accident, the potential of accidents occurring should be reduced. The City of San Jose can make available to the County, the technical resources of its Airport Department staff to provide guidance in implementing these recommendations. Additionally, periodic meetings should be held between City and County staffs to discuss any recurring problems and monitor the safety concerns at Reid-Hillview Airport.

VI. Conclusions and Recommendations

A. Summary of Findings

This report has analyzed two independent issues:

- o Effect on San Jose International Airport of the Closure/Relocation of Reid-Hillview Airport.
- o Safety of operations at Reid-Hillview Airport.

With regard to the first issue, closure or relocation would have significant effects on San Jose International Airport. They are as follows:

1. Increasing general aviation activity by up to 20%.
2. Increased complexity of air traffic control at San Jose International due to change in fleet mix.
3. Increased pressure to accommodate more general aviation aircraft than currently contained in the Airport Master Plan.
4. Increased delay for all aircraft operating at San Jose International by 6,578 minutes per day or 40,000 hours per year in 1995, assuming general aviation operations are increased by 20%.
5. Increased costs to the airlines of \$17.7 million per year in 1995, in addition to an unquantifiable cost to general aviation users.
6. Reduction of San Jose International's ability to attract new airline service.

The safety of aircraft operations in and around Reid-Hillview Airport were explored in Chapter V. The basic findings were as follows:

1. Reid-Hillview meets all federal standards and requirements with regard to the airfield and the approach protection areas.
2. Air traffic control procedures can be improved to further reduce the potential of accidents.
3. Airport management practices could be enhanced to further control and regulate operations at the Airport.

The conclusion reached is that Reid-Hillview is a technically safe airport, however, certain actions can be taken to reduce the human error factor which are frequently the cause of most accidents.

B. Recommendations

The findings discussed in Section A of this chapter lead to the following recommendations:

1. Reid-Hillview Airport plays a significant role in reducing congestion at San Jose International Airport and its relocation or closure would have very detrimental affects on the use of airspace and facilities at San Jose International Airport.
2. To further enhance the control of aircraft while in flight it is recommended that the FAA implement an additional form of airspace control. It would discourage some general aviation flying but this must be balanced against the added control and safety.
3. The FAA, in conjunction with the County should modify its air traffic control procedures at Reid-Hillview to eliminate procedures which may be questionable from a safety perspective such as night straight-in-approaches.
4. The City of San Jose should participate in the Airport Safety Committee being established by the FAA at Reid-Hillview Airport.
5. The County should upgrade the quality and quantity of its on-site staff to ensure that appropriate procedures are being followed at Reid-Hillview Airport.
6. The County should, at the earliest possible time, revise its land leases to incorporate very definite language as to the standards that must be met by fixed base operators.
7. City and County staffs should meet periodically to review actions at Reid-Hillview and to discuss other areas of concern.

APPENDIXES:

- A. Minutes of Airport Commission Meeting
- B. References

APPENDIX A
SAN JOSE AIRPORT COMMISSION
MINUTES OF THE SPECIAL MEETING
OF AUGUST 25, 1986

CALL TO ORDER AND ROLL CALL

The special meeting of the Airport Commission was called to order by Chairman Bettencourt at 7:22 p.m. All Commissioners were present. Also present was Council Member Iola Williams, liaison to the Commission.

STAFF PRESENTATION

Raul Regalado, Director of Aviation, explained that in April, the City Council referred to the Airport Commission the issue of the impact on San Jose International Airport of closing or relocating Reid-Hillview Airport. Subsequently, the City Council referred to the Administration a request to analyze the safety aspects of Reid-Hillview. Mr. Regalado introduced Steve Grossman, Special Projects Officer, who explained the methodology used in the Evaluation Study. Staff studied the effect on airports throughout the county if Reid-Hillview were to be closed or relocated, and the effect on airspace with the additional traffic San Jose International might have to accommodate. In terms of safety, staff studied the facilities and operations at Reid-Hillview to identify deficiencies or determine if there could be improvement. Discussions were held with the Federal Aviation Administration, County Airports Administrators, and FAA Traffic Controllers, as well as reviewing standards set by the Airport Land Use Commission, the Regional Airport Planning Committee, and the State of California. One staff recommendation is that the FAA should implement a Terminal Control Area (TCA) to include Reid-Hillview, which would require aircraft penetrating the TCA to come under strict control of the FAA air traffic control facilities.

Mr. Grossman explained that Reid-Hillview is classified as a reliever airport and has played an important role in taking some of the general aviation aircraft from San Jose International. In 1980, San Jose Airport's Master Plan indicated that approximately 804 based aircraft would be accommodated at SJC in the year 1997. A similar plan was developed by the County for their airports. Based on these reports, future demand for based aircraft in the County would be 2,850. If Reid-Hillview were to close and the three other airports were developed to their maximum, 1,694 aircraft could be accommodated - a shortfall of 1,156 parking spaces. This would necessitate more general aviation facilities.

Mr. Grossman reviewed the impacts if Reid-Hillview were to be closed or relocated. There is a demand for centrally located airports; and if R-H were removed from its current location, there would be more of a demand on SJC. San Jose Airport activity would increase 20% more than originally planned by 1995. In terms of airline operations, this would result in approximately 3.7 minutes of added delay (616,441 minutes per year), at a cost of \$28.80 per minute (\$17,753,506 per year). These figures do not include the impact on general aviation, as it is difficult to quantify because of the different types of aircraft. The result would be a difficulty in attracting new airlines or keeping existing ones.

Mr. Grossman indicated that an evaluation was conducted on the safety of Reid-Hillview, and it was determined that the airport is not in violation of any set safety standards, to our knowledge. The FAA has the responsibility for licensing and certifying pilots and mechanics. They conduct on-site inspections of repair stations, and these inspections have increased since incidents have occurred at Reid-Hillview. There are on-going requirements for pilots to maintain their certificates, as well as inspectors; however, there are no on-going requirements for individual licensed mechanics. Meetings were held with the air traffic controllers at Reid-Hillview, and it was determined that their procedures were standard. It was determined that the approach to Reid-Hillview from the south at night might be a difficult one, and that possibly this could be altered. This is included in the Report as a recommendation to the FAA to review. The FAA is also establishing a safety committee at R-H as an information tool for the pilots, and the staff is recommending that the City be included as a part of the Committee.

Mr. Grossman indicated that in discussions with various individuals, it was determined that there should be improvements made to on-site staffing. There should be staff on site during all operating hours who are experienced in airport operations. It was also determined that leases with the FBO's based at Reid-Hillview should be revised to improve criteria for operation.

Mr. Grossman reviewed the findings and recommendations as listed in the Analysis.

PUBLIC COMMENTS

Andy Lucero, a resident in the vicinity of R-H, spoke in favor of closing or relocating Reid-Hillview Airport due to the negative impact on the surrounding neighborhoods and potential safety hazard. He described the close proximity of schools, Lake Cunningham Park, churches, and Eastridge, and indicated that there had been a number of airplane crashes at the schools in the area. Mr. Lucero commented that the majority of airplane owners based at R-H do not live in San Jose, particularly on the East Side.

Robert Oneil, representing the Airport Preservation Committee, spoke against closing or relocating the airport; however, he is opposed to a TCA being implemented. He indicated he was a member of the Advisory Committee to the Ad Hoc Committee to the Board of Supervisors. Commissioner Reppas asked what the Advisory Committee had accomplished. Mr. Oneil responded that the group was mainly informational; however, they had developed a financial impact study on closure of the airport.

Commissioner Zazueta asked what are the drawbacks to using the South County Airport. Mr. Oneil responded that the majority of aircraft based at Reid-Hillview are business-related and South County is not located as close to the center of Silicon Valley as Reid-Hillview.

Mr. Orval Fairbairn, representing the California Aviation Council, spoke against closing or relocating Reid-Hillview Airport, and indicated that no airports in the area have had third party fatalities. Commissioner Reppas asked what the California Aviation Council could

do to improve safety. Mr. Fairbairn responded that increased education of pilots and maintenance personnel would help, and that flight safety seminars, sponsored by the FAA, are held regularly. Pilots are required to have a flight review every two years. Commissioner Reynolds asked what would be done to get a pilot out of the air if the pilot were found to be a risk to get him out of the air. Mr. Fairbairn responded that it would be difficult; however, he would report the individual and the license could possibly be suspended. Vice Chairman Tilson asked Mr. Fairbairn to explain his opposition to a TCA. Mr. Fairbairn responded that he believed a TCA increased the chance of pilot error. Mr. Oneil added that TCA's are usually implemented only at heavily congested airports.

Mr. Jay Jaso, County Aviation Director, offered comments on the management issues of Reid-Hillview, including needed financing and staffing improvements. He indicated that a Safety Committee is in the process of being set up and that FAA-sponsored safety seminars will be an on-going practice. Mr. Jaso reported that he is in the process of creating new positions to improve staffing and developing minimum standards for commercial operations, as well as revising airport Rules and Regulations. Vice Chairman Tilson asked what user studies have been conducted by the County for its airports. Mr. Jaso responded that no formal studies have been conducted; however, it is his estimate that approximately 40% of the activity at Reid-Hillview is business-related. Commissioner Reppas asked for the total budget of operating the County airports, including maintenance, and how much of it is labor-related. Mr. Jaso responded that the budget is \$946,285 and approximately 62% is labor-related. Commissioner Reynolds asked how many accidents occurred at Reid-Hillview over the last five years and how they are occurring. Mr. Jaso responded that 8 accidents occurred at Reid-Hillview and 1 at Palo Alto, and that the majority of accidents occur as a result of pilot error.

Amelia Reid, a fixed base operator from Reid-Hillview, spoke against closing or relocating Reid-Hillview. Commissioner Reppas asked what effect Eastridge Shopping Center has on the runway at Reid-Hillview. Ms. Reid responded that planes remain higher to clear the buildings. Chairman Bettencourt asked if there were any objections from the County or pilots when Eastridge was built. Ms. Reid responded that the pilots would have preferred that it remain a golf course; however, the options were either residential or commercial.

Ms. Jean Lamb, representing the Antique Aircraft Association, spoke against closure or relocation of Reid-Hillview Airport.

Ms. Maria Lucero spoke in favor of closing or relocating Reid-Hillview Airport. Commissioner Licursi asked how many schools were in the area. Ms. Lucero responded that there were 5. Commissioner Licursi asked if there had been any crashes at the schools. Mr. Andy Lucero responded that there had been a crash on school property.

Mr. Regalado reiterated the purpose of the staff report, and the fact that direction was given to look at two issues only - the impact on San Jose International Airport regarding the closure or relocation of Reid-Hillview, and the safety aspects of the facility.

COMMISSION COMMENTS

Vice Chairman Tilson expressed concern that the report did not include alternatives to closure or relocation. She also indicated that the County has paid little attention to aviation activities at their airports. Commissioner Reppas commented that more facts and figures are needed to present the report to the City Council. Commissioner Zazueta expressed concern with the safety of the neighborhoods and felt there was not enough information as to responsibility of improving the airport if it remains in place. Commissioner Reynolds indicated his only concern was with the operational problems at Reid-Hillview which increase the risk of accidents. Commissioner Licursi expressed concern regarding the safety of the residents in the area of the airport.

STAFF SUMMARY

Mr. Grossman indicated that staff finds that closing or relocating Reid-Hillview would have a significant adverse effect on San Jose International Airport. In regard to safety issues, staff finds that Reid-Hillview meets safety criteria established by state and federal regulation. Staff found that improvements could be made to increase safety at the airport, which are contained in the report. Mr. Regalado added that the County has embarked on a comprehensive study regarding Reid-Hillview, which should be completed in the near future.

ACTION

COMMISSIONER STRANGIS MOVED TO RECOMMEND TO CITY COUNCIL THAT RELOCATION OR CLOSURE OF REID-HILLVIEW AIRPORT WOULD HAVE VERY DETRIMENTAL EFFECTS ON THE USE OF AIRSPACE AND FACILITIES AT SAN JOSE INTERNATIONAL AIRPORT, AND THAT STAFF'S SAFETY-RELATED RECOMMENDATIONS BE IMPLEMENTED. COMMISSIONER REPPAS SECONDED THE MOTION; ADOPTED UNANIMOUSLY.

VICE CHAIRMAN TILSON MOVED THAT THE AIRPORT COMMISSION FORWARD A REQUEST TO CITY COUNCIL FOR FULL PARTICIPATION IN ALL FUTURE HEARINGS, DISCUSSIONS, AND POLICY STUDIES THAT ARE DONE RELATIVE TO THE ISSUE OF REID-HILLVIEW AIRPORT, WHICH IS PART OF THE AVIATION SYSTEM OF THIS COUNTY. COMMISSIONER REPPAS SECONDED THE MOTION; ADOPTED UNANIMOUSLY.

ADJOURNMENT

There being no further discussion, the meeting was adjourned at 10:40 p.m.

Respectfully submitted,

Robert Bettencourt, Chairman

Raul L. Regalado, Secretary to
the Commission

APPENDIX B

REFERENCES

Aviation Planning Services, Santa Clara County Airports Master Plan Report, June 1982.

Federal Aviation Administration, Draft FAA Aviation Forecasts: San Francisco, 1985.

Federal Aviation Administration, Advisory Circular 150/5300 - 4A, Utility Airports -- Air Carrier Access to National Transportation.

Federal Aviation Administration, National Plan of Integrated Airport Systems 1984 - 1993, August 1985.

Water E. Gillfillan and Associates, General Aviation Development Program Consolidation Report, For The City of San Jose and Santa Clara County.

McClintock, Becker and Associates, Draft FAR 150 Airport Noise Compatibility Study, For The City of San Jose, July 1985.

Wadell Engineering Corporation, General Aviation Reliever Airport - Site Feasibility Study, For The Cities of Fremont and San Jose, October 1982.

U.C. BERKELEY LIBRARIES



C124886527

